

A Salvage Technique to Remove Femoral Nail with Stripped Extraction Threads : A Case Report and New Technique

¹Misran MM; ¹Shah A MA; ¹M Shukri MN; ¹Salleh MA

¹Department of Orthopaedics SASMEC IIUM.

INTRODUCTION:

Implant removal surgeries in orthopaedics present various challenges, with outcomes ranging from routine procedures to complex extractions. We present a case of extraction mechanism failure during the removal of a Synthes recon femoral nail overcome by a unique cerclage wire technique.

REPORT:

The patient had previously undergone femur intermedullary nail placement for a closed middle third left femur fracture.

The removal surgery encountered complications when the extraction mechanism disengaged due to stripped titanium extraction threads on the nail. A subsequent extraction surgery, four days later, utilising Synthes extraction set, yielded no success as the extraction screw couldn't engage the threadless proximal end. Resorting to a salvage cerclage wire technique, the nail was eventually removed. Examination post removal revealed solid bone ingrowth in the proximal dynamic holes, undetected by preoperative X-rays and intraoperative balltip guidewire. Cerclage wires, providing significant power transfer from the sliding hammer guide to nail, successfully sheared off the bone ingrowths. The cerclage wire technique involved the patient in lateral position, extension of the original insertion wound, and 0.5cm osteotomy of the greater trochanter to expose the antegrade locking hole which was used to thread through a 1.2mm stainless steel wire and bridge the proximal nail and hammer sliding guide. A 6-core construct was crucial for strength, as a 4-core construct failed in tension. The hammer's size was upscaled from 500g to 700g to enhance extraction power.

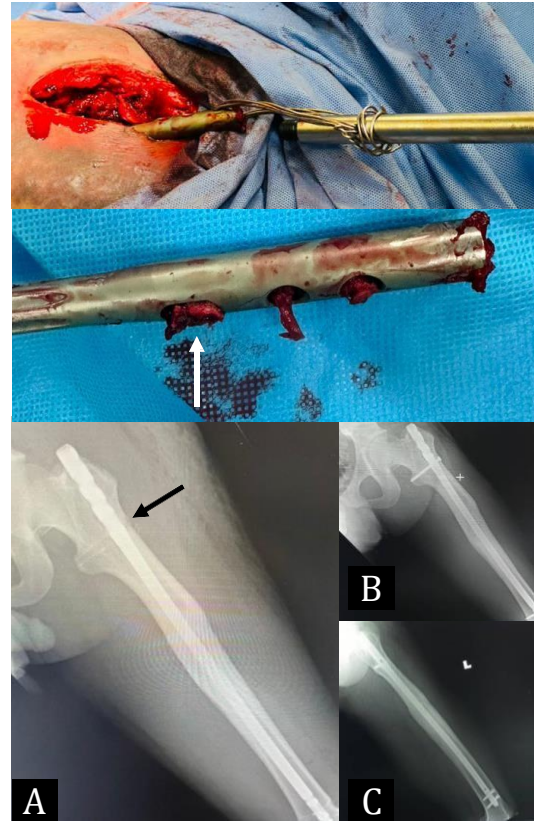


Figure 1: 6 core cerclage wire construct

Figure 2: Bony ingrowth at oblong hole (white arrow)

Figure 3: extraction halted at proximal line of previous proximal dynamic screw hole (black arrow)

CONCLUSION:

The salvage cerclage wire technique proved effective, showcasing the importance of thorough preoperative assessment and innovative approaches in overcoming extraction failures during orthopaedic procedures.

REFERENCES:

Acharya, M., Alani, A., & Almedghio, S. (2008). The Fish Hook Technique of extracting broken intramedullary nails. *Acta Orthopaedica Belgica*, 74(5), 686